

Claims

- 1) Cold rolling method for the production of an annular composite workpiece made of at least two hollow cylindrical workpieces made of different materials which are roll formed together, **characterized in that** the hollow cylindrical workpieces (1 to 5) are formed by means of a generally known axial roll forming method to a composite workpiece (8 to 11), wherein two diametrically opposed roll forming tools (6) for forming outer profiles together with a rolling arbor (7) or a roll forming tool (12) for forming an inner profile press the hollow cylindrical workpieces (1 to 5) against each other.
- 2) Method according to claim 1, **characterized in that** the hollow cylindrical workpieces (1 to 5) are inserted loosely into each other before rolling.
- 3) Method according to claims 1 and 2, **characterized in that** the hollow cylindrical workpieces (1 to 5) have such a play relative to one another that they can barely be joined by hand.
- 4) Method according to claim 1, **characterized in that** rings as hollow cylindrical workpieces (1 to 5) are inserted into each other and are formed to a composite workpiece (8 to 11) by an axial ring roll forming method.
- 5) Method according to claim 1, **characterized in that** pipes as hollow cylindrical workpieces (1 to 5) are inserted into each other and formed by an axial pipe roll forming method to a composite workpiece (8 to 11).
- 6) Method according to claim 1, **characterized in that** at least one of the surfaces touching one another of the hollow cylindrical workpieces (1 to 5) is coated with a material, e.g. aluminum.
- 7) Annular composite workpiece, comprised of at least two hollow cylindrical workpieces made of different materials, **characterized in that** the composite workpiece is produced by an axial roll forming method.
- 8) Composite workpiece according to claim 7, **characterized in that** the composite workpiece is a bearing ring.

9) Composite workpiece according to claim 8, **characterized in that** the bearing race (1') of the bearing ring is made of antifriction bearing steel and the support ring (2') is made of a steel of reduced high quality.

10) Composite workpiece according to claim 7, **characterized in that** the composite workpiece is a gear ring.

11) Composite workpiece according to one of the claims 7 to 10, **characterized in that** one of the workpieces (1 to 5) is comprised of a nonferrous metal, in particular aluminum.

12) Composite workpiece according to one of the claims 7 to 11, **characterized in that** one of the workpieces (1 to 5) is made of plastic material.

13) Composite workpiece according to claim 5 **characterized in that** one of the workpieces (1 to 5) is made of powder material.